Measures of success: varying intention and participation in MOOCs

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Massive Open Online Courses (MOOCs) are widely understood to suffer from low completion rates, and this is taken as evidence that MOOCs are not living up to their promise. However we argue that the common understanding of completion rates is misleading in the MOOC context because many of the registered participants are not actually students, in that they never intended to "complete" the course. We examine student participation in the light of declared intention in the Engaging India MOOC. We show the number of passing students is 28% of the number of registrants who intended to complete the course. We also show that a significant number of students completed the solitary assessments but did not complete assessment items that involved the discussion forum, with only 13% completing the final reflective piece. We conclude that a new understanding of completion is needed for the MOOC context and call for closer examination of the interplay between assessment type and student participation.

Keywords: MOOC, Massive Open Online Course, participation, engagement, intention

Introduction

Much has been made of the fact that MOOCs exhibit low completion rates (Clow 2013). This has led to a deficit understanding of MOOCs as exhibiting much higher rates attrition rates than other university courses (Yang et al. 2013), and suggestions that this is because the lack of a selection process means students are ill-prepared for engaging in the MOOC (DeBoer et al., 2013). However the simple comparison of registrations with the number of students who pass underestimates the actual completion rate, since many people who register for a MOOC barely access the course at all (Kizilcec, Piech & Schneider, 2013). Registration may mean no more than interest in finding out about the course, and the open and online nature of MOOCs invites quite different forms of engagement from other university courses (Breslow et al., 2013). Therefore a more nuanced understanding of success of a MOOC is required – do those who register they get what the expected from the MOOC? Of those who wanted to 'learn', can you identify that learning occurred? Organisational drivers may apply, such as boosted enrolments in paid courses, enhanced reputation, or opportunities to reconfigure degrees, but we are interested here in measures of success that align with student engagement and learning outcomes.

Student activity data in two MOOCs (each repeated three times) reveals distinct patterns of engagement in MOOCs (Anderson et al., 2014). By examining two aspects of student activity – viewing videos and completing assessment items, the authors identify five classes of students: Viewers, who access MOOC content without completing any assessments; Solvers, who complete assessments without accessing materials; All-rounders, who access materials and complete assessment items, Collectors, who download materials (any may or may not view them), and Bystanders, who do not do much at all. In a normal university course, Viewers, Collectors and Bystanders would be cause for concern, but that is arguably not the case in MOOCs. Rather, it could be regarded that these are not 'students' at all, but interested parties embracing the open nature of MOOCs for other purposes. The term 'students' would be more sensibly reserved for those who participate in the course assessment.

A third aspect of student activity is participation in discussion forums. Forums in online courses are used to address managerial and technical issues, for forming social connections, and for discussing content (Goold, Coldwell & Craig, 2010). Technological solutions may replace the need for forums and teacher direction in managerial matters (Ponti, 2014), and many MOOCs forum participation is unguided and tends towards a Q&A format (Anderson et al., 2014). However for some disciplines deep engagement with the topics requires participation in critical discourse, and learning to adopt scholarly patterns of discourse requires teacher facilitation, (Anderson et al., 2001) in the form of questions and comments which are *authentic* and *coherent* (Della Noce, Scheffel, & Lowry, 2014). In such courses understanding student activity in the forums is a significant component of participation and should be considered alongside other types of assessment.

The Engaging India MOOC

The Engaging India MOOC offered by the Australian National University in investigates India through different disciplinary lenses, including culture, language, history, economics and international relations over its 10-week duration. Overviews from the two convenors pull together videos, readings and interactive content from 7 guest experts. Students view videos interspersed with (formative quizzes), explore the extension materials, and discuss the topics with each other in the forums. The strength of this multi-lens format is to challenge pre-conceptions and encourage inter-disciplinary exploration.

It was determined that scholarly discussion is required in this course to assist students to engage with the topics and formulate new ideas, and the importance of this discussion is signaled to students by inclusion as a significant component in the assessment structure. The course assessment consisted of: computer-graded tests (weeks 2-9, 40%); surveys (weeks 1, 5, and 10, 10%); participation in the discussion forums (weeks 1-9, 30%); submission and peer review of a final reflective project (week 10, 20%). Thus half of the grades were assigned to solitary assessment activities, and the other half required creative contribution. The pass rate was set at 65%.

In practice, the MOOC platform did not allow grades to be automatically assigned for contributions to the discussion forum, and peer review was no available when the course launched, so credit was gained by student declaration using the mechanics of quizzes. A cynical student might choose to declare their contribution without actually participating in these activities, but we have not observed this behaviour in the student data.

Live teaching presence in the course took three forms: moderators guided discussion in the forums, asking leading questions, modelling thoughtful answers, and challenging and extending student ideas though questions; survey responses were compiled and reported to students soon after completion; and the course convenors created video responses to the week's discussion forum interactions at the end of each week.

Student intention and participation

The Engaging India MOOC commenced in April 2014. One measure of success for a course is student satisfaction. As an indication of satisfaction, the final student survey in week 10 asked students whether the course met their expectations. 566 students who replied, and of those 166 said that the course exceeded their expectations, a further 248 said that the course met their expectations, and only 42 (7%) said the course did not meet their expectations. However 11,132 students registered for the course so the respondents to this survey are a small selection of those registered. It is possible, indeed likely, that a greater proportion who found that the course did not meet their expectations did not make it through to week 10.

A significantly larger number participated in the week 1 survey. Of the 1973 respondents

- 1277 (around 65%) told us that they intended to complete all activities in the MOOC;
- 239 indicated that they intended to "Do everything but the assessment";
- 347 indicated they intend to "Look around and watch all the videos"; and
- 110 indicated they intended to just "Look around".

We presume that the remaining 9159 registered people also intended only to look around. Certainly we doubt that they intended to complete the assessment, as the survey was the first (and easiest) part of the assessment. The number of students who achieved the 65% pass mark for this course was 358, which is 3% of the total number of registrations, but 28% of the number (1277) who indicated intent to participate fully in the course.

Figure 1 shows student participation in the assessment activities over the 10 weeks of the MOOC, plus the number of Intended completions and Passing students. Student participation in the first Quiz and Survey exceeded the Intended number. The participation rate for Quiz questions remained quite high throughout, with 526 completing the Quiz in week 9, 41% of the Intended number. Survey responses dropped off more quickly – even though they require low commitment to complete, they are not closely tied to the course content so it is likely that some students did not see the value of completing these surveys.

The interactive forum assessment activities saw less action – with student participation at 80% of the Intended number in week 1, when introduction posts were invited, and dropping down to 51% when the hard work of responding to content-questions began. Interestingly, after week 2 the rate of drop off was slower and more consistent than the rate for quizzes, ending at 338 in week 9, or 40% of the Intended number.

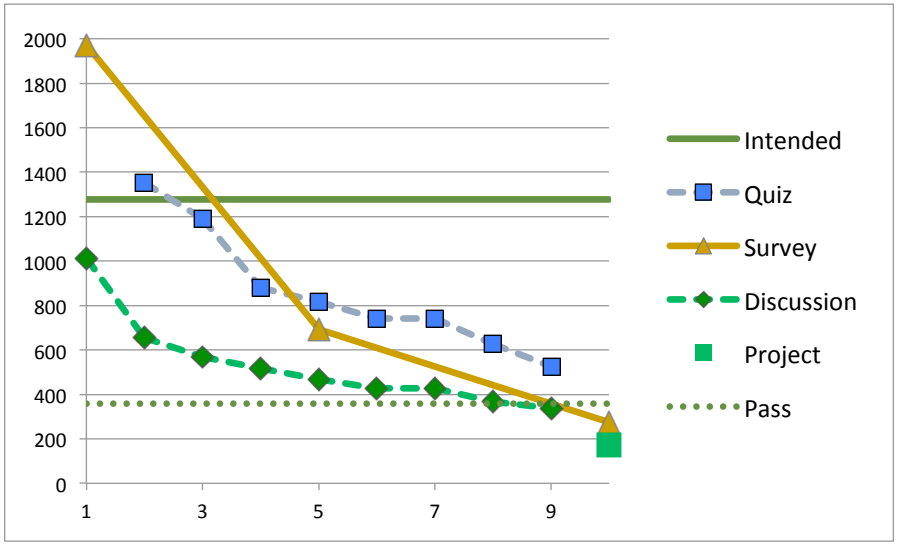

Figure 1: Student participation in assessment activities in the Engaging India MOOC. The horizontal axis refers to weeks and the vertical axis refers to numbers of students completing the activities for the week.

The final project asked for reflection and synthesis across the whole course. This requires a significant and sophisticated cognitive engagement. The number of responses was 170 – only 13% of the Intended number. This is quite a small number, however students who had successfully completed all other activities in the MOOC did not need to complete the project in order to achieve the 65% pass rate. So perhaps some students took a strategic decision to omit the more challenging task.

Student activity perception

Student participation indicates a preference for solitary learning and disinclination to participate in critical discourse and reflection. This is borne out in the results of the week 10 survey question, which invited students to indicate the learning activities they found most valuable. Their combined rankings are, in order:

1. Hearing from the experts
2. Referring to readings and other course materials
3. Taking knowledge checks & tests
4. Referring to weekly introduction & summing up
5. Participating in discussion
6. Doing the reflective project
7. Learning from other students

This is interesting because the first three are the distinctive common elements of xMOOCs – videos, computer graded quiz questions, and other online materials. On the other hand, the last three are core elements of social-constructivist pedagogy and underpin best practice in online course design (Garrison, Anderson & Archer, 1999). In disciplines that value critical inquiry, these must be accommodated in MOOC design.

Moreover, while learning from other students was not ranked highly in the survey results, many of the students did post glowing endorsement of it in the forums, for example:

> The discussion forum, when I look back, I feel, had some very solid, intellectually stimulating questions each week! In hindsight, I also feel that it surprised me too! I look back and think, had it not been for this course I would have never connecting this sort of topic with that issue and looked at it from this perspective. This brought people from different nationalities, cultural (and) educational background, ideological beliefs under a single roof. This has helped all of us learn, relearn and unlearn so much, so well. This particular aspect was responsible for making the course truly international, I could feel I am in an open classroom, where tutors are enlightening our minds and students, teachers and e-moderators were engaging in discourse analysis, discussions, and debates. (Shweta108)

Conclusion

MOOCs are not like other university courses and people register for MOOCs for many different reasons. Some people who register for MOOCs intend to complete all the assessment for the course. In discussing attrition and retention of MOOCs it only makes sense to report on the proportion of this "intending to complete" cohort who complete and pass the course. Investigation of intention and participation in Engaging India shows the number of students who passed is 28% of the number of students who intended to complete the course. This figure is lower than the completion rate for most university courses but is higher than the widely reported 6% pass rate for MOOCs.

This study did not track the behaviour of individual students so it is not certain that all of the passing students are among the group who indicated that they intended to complete the course. Moreover, student activity in the Engaging India MOOC revealed varying rates of participation in different types of activities. Solitary, computer graded assessment activities were more likely to be completed than written and forms of assessment. Further investigation of this phenomenon is necessary in order to understand the challenges and potential of teaching critical inquiry in the humanities and social sciences using MOOCs.

References

Anderson, A., Huttenlocher, D., Kleinberg, J., & Leskovec, J. (2014). Engaging with massive online courses. *Proceedings of the 23rd international conference on World wide web* (pp. 687-698). International World Wide Web Conferences Steering Committee. http://www-cs.stanford.edu/people/jure/pubs/mooc-www14.pdf

Anderson, T., Liam, R., Garrison, D. R., & Archer, W. (2001). Assessing teacher presence in a computer conferencing context. *Journal of Asynchronous Learning Networks 5*(2), 1–17. http://auspace.athabascau.ca/handle/2149/725

Breslow, L., Pritchard, D. E., DeBoer, J., Stump, G. S., Ho, A. D., & Seaton, D. T. (2013). Studying learning in the worldwide classroom: Research into edX's first MOOC. *Research & Practice in Assessment,* 8, 13-25. http://www.researchgate.net/publication/237091973_STUDYING_LEARNING_IN_THE_WORLDWIDE_CLASSROOM_RESEARCH_INTO_EDXS_FIRST_MOOC/file/72e7e51b7e7e173d32.pdf

Clow, D. (2013, April). MOOCs and the funnel of participation. *Proceedings of the Third International Conference on Learning Analytics and Knowledge* (pp. 185-189). ACM. http://oro.open.ac.uk/36657/

DeBoer, J., Stump, G. S., Seaton, D., & Breslow, L. (2013). Diversity in MOOC students' backgrounds and behaviors in relationship to performance in 6.002 x. *Proceedings of the Sixth Learning International Networks Consortium Conference*. http://tll.mit.edu/sites/default/files/library/LINC%20'13.pdf

Della Noce, D. J., Scheffel, D. L., & Lowry, M. (2014). Questions That Get Answered: The Construction of Instructional Conversations on Online Asynchronous Discussion Boards. *Journal of Online Learning & Teaching*, 10(1). http://jolt.merlot.org/vol10no1/dellanoce_0314.pdf

Garrison, D. R., Anderson, T., & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The internet and higher education*, 2(2), 87-105. http://www.researchgate.net/publication/251401595_Critical_Inquiry_in_a_Text-Based_Environment_Computer_Conferencing_in_Higher_Education1/file/3deec528442b7ba3d2.pdf

Goold, A., Coldwell, J., & Craig, A. (2010). An examination of the role of the e-tutor. *Australasian Journal of Educational Technology*, 26(5), 704-716. http://www.ascilite.org.au/ajet/ajet26/goold.html

Kizilcec, R. F., Piech, C., & Schneider, E. (2013). Deconstructing disengagement: analyzing learner subpopulations in massive open online courses. *Proceedings of the third international conference on learning analytics and knowledge* (pp. 170-179). ACM. http://lytics.stanford.edu/wordpress/wp-content/uploads/2013/04/Kizilcec-Piech-Schneider-2013-Deconstructing-Disengagement-Analyzing-Learner-Subpopulations-in-Massive-Open-Online-Courses.pdf

Ponti, M. (2014). Hei Mookie! Where do I start? The Role of Artifacts in an Unmanned MOOC. *Proceedings of 47th Annual Hawaii International Conference on Systems Sciences (*pp. 1625-1634). IEEE. https://oerknowledgecloud.org/sites/oerknowledgecloud.org/files/mechmooc_ponti.pdf

Yang, D., Sinha, T., Adamson, D., & Rosé, C. P. (2013). Turn on, tune in, drop out: Anticipating student dropouts in massive open online courses. *Proceedings of the 2013 NIPS Data-Driven Education Workshop*. http://lytics.stanford.edu/datadriveneducation/papers/yangetal.pdf

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